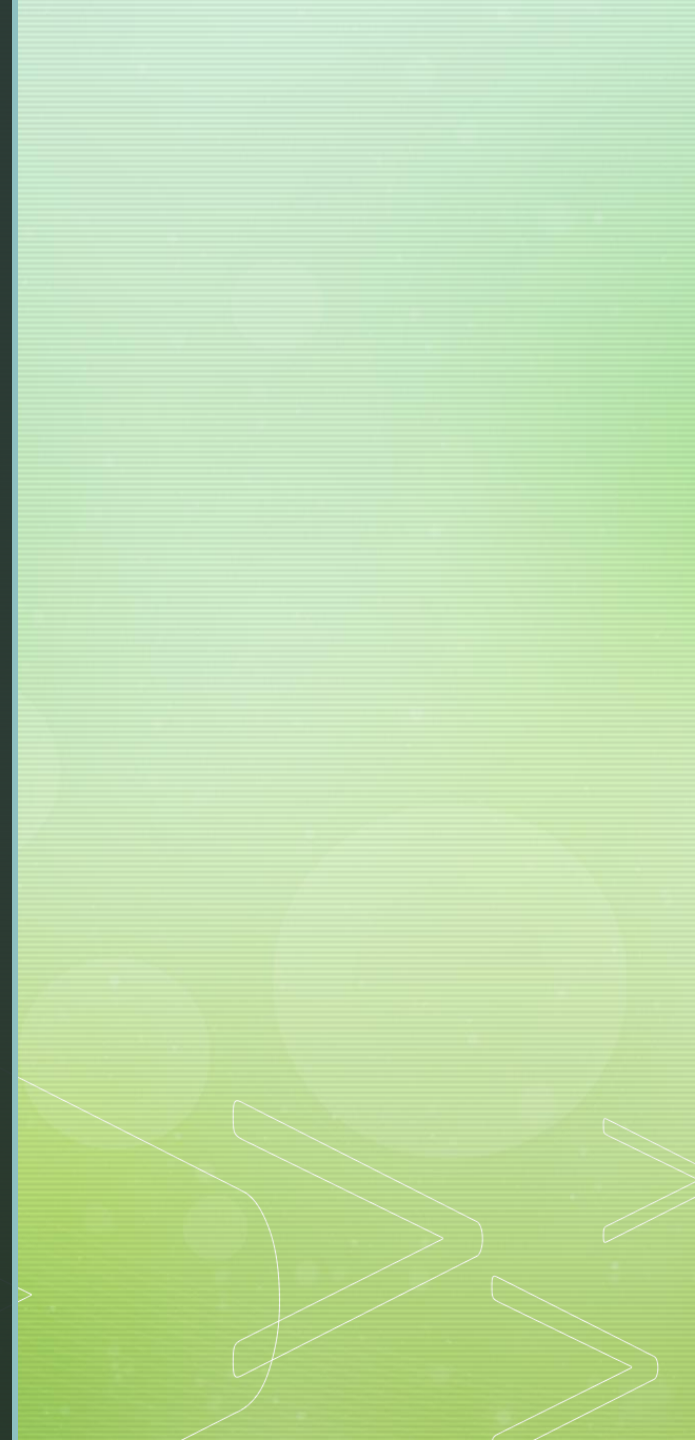


District 3 Supervisor – Eddie Crandell

Clover Creek Chi' Revitalization Project



History on Clover Creek and the Diversion

- Was developed in 1958 - The upper portion of the project (designed to) protects the community of Upper Lake from flooding by Middle Creek and Clover Creek. The lower portion of the system protects farmland and some residences from inundation by Clear Lake.
- Efforts to protect the community of Upper Lake began in 1954 with Congress authorizing a federal flood control project. It was known as the Middle Creek Flood Control Project.
- The Corps of Engineers constructed the project starting in 1958. The levees upstream of the Middle-Scotts Creek confluence were constructed between 1959 and 1961 in substantial accordance with the design plans.
- Sited resource:
(http://www.lakecountycalifornia.gov/Government/Directory/WaterResources/Programs___Projects/Flood_Management/MiddleCreek.htm?PageMode=Print#:~:text=The%20Corps%20of%20Engineers%20constructed,accordance%20with%20the%20design%20plans).

History On Clover Creek and the Diversion- Continued

- After several failures in the construction of the levees in the Reclamation Area and application of some emergency measures during construction, the project was completed in 1966.
- The completed levees were not in accordance with normally accepted engineering standards at the time. The State conditionally accepted the levees in the Reclamation Area into the project.
- Sited resource:
(http://www.lakecountycalifornia.gov/Government/Directory/WaterResources/Programs___Projects/Flood_Management/MiddleCreek.htm?PageMode=Print#:~:text=The%20Corps%20of%20Engineers%20constructed,accordance%20with%20the%20design%20plans).

Current Problems with Clover Creek and Upper Lake

- Sediment build up
- Blackberry Bushes
- Current Gate blockage
- Rat infestation due to garbage dumping
- Upper Lake Still Floods
- Road and Drainage damage is a problem in Upper Lake
- Chi' (Lavinia Exilicauda Chi) also known as Clear Lake Hitch cannot spawn or navigate through clover creek due to the Blackberry bushes and sediment buildup

Map of Clover Creek

MIDDLE CREEK FLOOD CONTROL



Blockages and Sediment Clover Creek Diversion



Gate at Clover Creek Diversion

- The first two is the gates which are overgrown and the third is the channel to the gates which is blocked.
- The original project was deficient in location of the gates and the channel design. The proposed project would reshape the channel to work with the gates and not fill in.
- This view of the channel shows the filled in nature of the channel which needs to be reconfigured to reduce this from happening.



Clover Creek 2nd Street Bridge



Clover Creek 1st Street Bridge



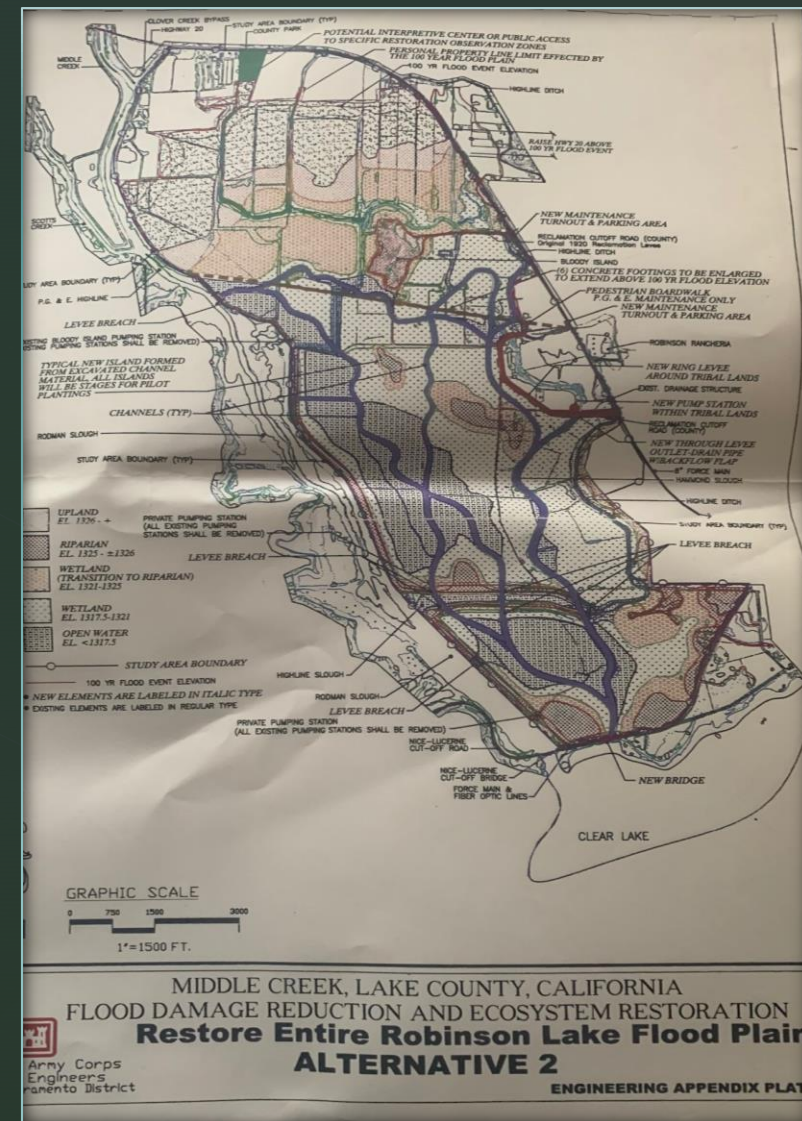
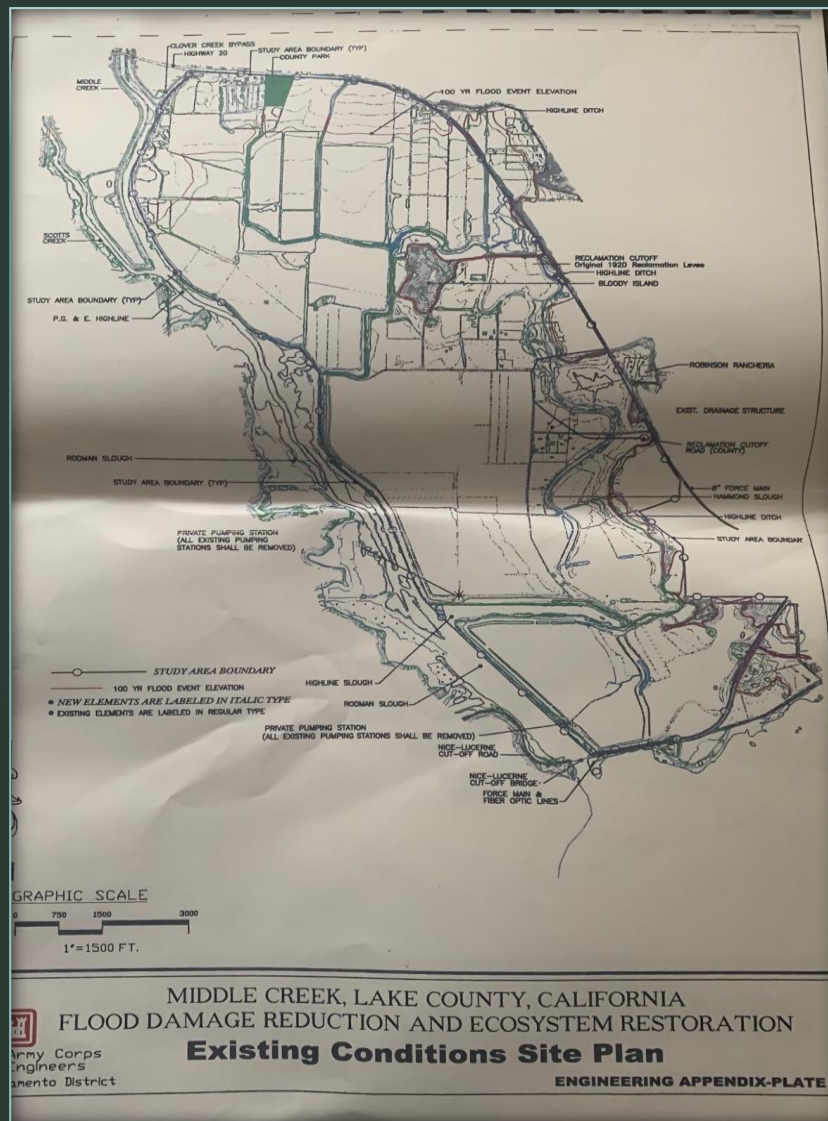
Clover Creek Highway 20 and Bridge Arbor Drive



Clover Creek Natural Flow



Middle Creek Restoration Maps



Chi' (*Lavinia Exilicauda Chi*) also known as Clear Lake Hitch



Upper Lake Road Damage - Flooding



Why is this a Shovel Ready Project and how does this benefit Clear Lake

- Rationale' for a Capital improvement project includes a Capital project (not being maintenance) that is constructed to improve something.
- Lowering the clover creek channel bottom to affect the ground water table should have been part of the original capital project but wasn't. The project will improve the groundwater table, will improve flood drainage toward the town side of the creek and improve the gate opening from the creek bypass channel side. This will improve future maintenance.
- Reconstructing the channel will also improve passage for fish to upper reaches of clover creek, as it allows water to drain the groundwater table longer in the year as flow for fish. Removing brush will also improve water flow and channel capacity, reduce berries that support rodents, improve property values, reduce evapotranspiration will also keep water in the creek. Part of the project could be to optionally install fencing for backyards to improve separation from homeowners.
- The project is not part of the Middle Creek restoration and is supported by the Restoration team as a valuable addendum to the middle creek natural area, the restoration of Chi migration in keeping with the Chi recovery plan and a boon to Upper Lake property values.
- The project should include a homeowners information packet and a review in front of the town council. This is a design-build shovel ready project that only needs a Department of Fish and Wildlife 1602 permit and approval of the BOS.



Thank You!

- This Presentation was influenced by the guidance of Supervisor Jim Steele
 - The Middle Creek Restoration Project Ad-Hoc Committee fully supported this project
 - Questions, Comments, Concerns?
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